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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

HABTE, ZEWDU

ART UNIT	PAPER NUMBER
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2661

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/875,154

Applicant(s)

ROBERTS ET AL.

Examiner

Zewdu Habte

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-14,16-22 and 24-30 is/are rejected.
- 7) ☒ Claim(s) 8,15,23,31 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Claim Objections

Claims 2-15 and 17-31 are objected to because of the following informalities:

In claim 2-15 lines 1, "A system" should be changed to – The system–.

In claim 17-31 lines 1, "A node" should be changed to – The node–.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 12, 13, 27, 28, and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 12, the phrase "the multi-layer switch fabric" renders the claim indefinite because there is no reference in claim 7 to a multi-layer switch fabric; it lacks positive antecedent basis in the claim. See MPEP § 2173.05(e).

Regarding claim 13, the phrase "the set of stage-1 switch elements" renders the claim indefinite because there is no reference in claim 12 to a set of stage-1 elements; it lacks positive antecedent basis in the claim. See MPEP § 2173.05(e).

Regarding claim 27, the phrase "the multi-layer switch fabric" renders the claim indefinite because there is no reference in claim 16 to a multi-layer switch fabric; it lacks positive antecedent basis in the claim. See MPEP § 2173.05(e).

Regarding claim 28, the phrase "the set of layer-1 switch elements" renders the claim indefinite because there is no reference in claim 27 to a set of stage-1 elements; it lacks positive antecedent basis in the claim. See MPEP § 2173.05(e).

Regarding claim 29, the phrase "the selected stage-1 switch element" renders the claim indefinite because there is no reference in claim 28 to a selected stage-1 element; it lacks positive antecedent basis in the claim. See MPEP § 2173.05(e).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 9-11, 16-18, 24-26 are rejected under 35 U.S.C. 102(e) as being anticipated by MacDonald (US 20020159681A1).

As to claims 1 & 16 MacDonald discloses a network node adapted to switch traffic between associated working and protection channels of a communications network (Fig. 5, fully protected multi-stage switch fabric) (Fig. 5a @ 122a & 140, an input port for a working signal interface and a protecting port for a protecting signal, respectively), the node comprising: a multi-stage switch fabric comprising a first stage

including a respective plurality of stage-1 switch elements (Fig. 6@104, stage 1); an interface (Fig. 5a @122a, input port interface) operatively coupled to a set of two or more stage-1 switch elements (Fig. 5a, shows that interface 122a is coupled to two external stage or stage-1 modules 122, or switch elements), the interface being adapted to convey traffic between a plurality of channels of the communications network and the set of stage-1 switch elements (col. 4, par. 53 lines 1-6, couplers on each input port deliver the associated input to the associated input stage modules); and a toggle adapted to control the set of stage-1 switch elements to selectively map traffic between a middle stage of the switch fabric and a selected one of a set of any two of the plurality of channels (it is inherent because a toggle is used to direct an input to a particular output).

As to claims 2 & 17 MacDonald discloses an input stage and an output stage of the multi-stage switch fabric (Fig. 6 @ 104 & 110, input and output stages or columns, page 3, par. 51, lines 7-10).

As to claims 3 & 18 MacDonald discloses wherein the set two or more stage-1 switch elements comprise less than all of the stage-1 switch elements of the multi-stage switch fabric (Fig. 5 shows 7 stage-1 elements; one interface is connected to 3 stage-1 elements which is less than 7).

As to claims 9 & 24 MacDonald discloses wherein two more interfaces are operatively coupled to respective sets of stage-1 switch elements (Fig. 4A @ 125, each module 120 is interconnected to at least one other external module, page 3, par. 43, lines 10-12; interface 125 is coupled to two modules, placed side by side as a set).

As to claims 10 & 25 MacDonald discloses wherein the respective sets stage-1 switch elements are non-overlapping (page 2, par. 10, lines 1-5, the plurality of input optical signals to a plurality of locations in a non-blocking manner...; this is to say that there is no overlapping signal connection at the port modules).

As to claims 11 & 26 MacDonald discloses wherein the number stage-1 switch elements within each set is the same (Fig. 5, 2 interfaces each connect to 3 stage-1 elements, i.e. 3 elements in each set).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-7, 14, 19-22, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacDonald in view of Grenier et al. (US 6654923 B1).

As to claims 4 & 19 MacDonald does not disclose a working channel and a protection channel of the communications network, but Grenier discloses, (Fig. 4b, protection entity 16 and working entity 14; entity is a group of channels bundled together, col. 7, lines 62, the virtual channels group that are transported on entity 14). It would have been obvious to one of ordinary skill in the art to combine MacDonald with

Grenier for the purpose of having a working channel and a protecting channel in a network. The motivation is to ensure uninterrupted traffic flow between stages.

As to claims 5 & 20 MacDonald does not teach wherein the protection channel is provisioned and associated with the working channel in accordance with a design of the communications network, but Grenier discloses (Fig. 4 shows a protection entity associated with a working entity). It would have been obvious to one of ordinary skill in the art to combine MacDonald with Grenier for the purpose of having a protecting channel as provisioned and associated with a working channel in a network. The motivation is to ensure uninterrupted flow of traffic.

As to claims 6 & 21 MacDonald does not disclose wherein the protection channel is dynamically allocated in response to detection of a network resource failure affecting traffic flow through the working channel, but Grenier discloses (col. 2, lines 1-9, when the system detects the error code, it switches to the protection path, that is to say, the path switching from working path to protection path occurs dynamically). It would have been obvious to one of ordinary skill in the art to combine MacDonald with Grenier for the purpose of changing paths dynamically when an error is detected in a network. The motivation is to minimize transmission delays in a network.

As to claims 7 & 22 MacDonald discloses wherein the interface comprises at least two port cards, each port card being adapted to convey traffic between at least two respective channels of the communications network and the set of stage-1 switch elements (page 3, par. 43, each external module 120 ...; this module or port card is

used to convey traffic between respective channels and external stage switch elements).

As to claims 14 & 30 MacDonald does not teach wherein the toggle comprises: a pointer having respective working and protection states corresponding to each one of the working channel and the protection channel, the set of stage-1 switch elements being adapted to map traffic between the middle stage of the switch fabric and one of the working channel and the protection channel in accordance with the state of the pointer, but Grenier discloses, (Fig. 4b, a toggle that includes a pointer with respective working and protection states corresponding each to one of the working channels and the protecting channels); and a controller (Fig. 3 @ 48, control processor) adapted pointer to select a state of the pointer (col. 8, lines 43-45, the control processor 48 declares the signal is degrading on entity 14; col. 8, lines 51-53, in response, the network element switches to receive traffic in protection entity 14; which means the processor functions as a switch pointer, selecting the protection state switch when there is a signal degradation on a link). It would have been obvious to one of ordinary skill in the art to combine MacDonald with Grenier for the purpose of having a toggle switch with a pointer to point to a respective state, according to the controller's signal. The motivation is to ensure the availability of a communication path and thus improving the operability of the system.

Allowable Subject Matter

Claims 8, 15, 23 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zewdu Habte whose telephone number is 571-272-3115. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


KENNETH VANDERPUYE
PRIMARY EXAMINER

Zewdu Habte (Zed)
Examiner
Art Unit 2661

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